

LERNER, I.O.

Are there separate septa between pulmonary zones and segments? Probl. tuberk., Moskva No.6:49-51 Nov-Dec 51. (CIML 21:4)

1. Candidate Medical Sciences. 2. Of the Department of Operative Surgery and Topographic Anatomy, Kishinev State Medical Institute (Head of Department--Honored Worker in Science Prof. S.M. Rubashov).

LENNER, I. O.

Simple method of increase of intrapulmonary pressure during
surgery of thoracic organs of dogs. Sovet. med. no.7:28-29
July 1951. (CML 20:11)

1. Candidate Medical Sciences. 2. Kishinev.

LERNER, I.O.

Fistula

Surgical therapy of bronchial fistulas according to P.I. Diakonov; historical note.
Khirurgiia, No.12, 1951

Monthly List of Russian Accessions, Library of Congress, March 1952. UNCLASSIFIED.

LENNER, I.O., kandidat meditsinskikh nauk.

Ligation, dissection, resection, and suture of the thoracic aorta in experimental conditions. Khirurgiia, no.11:25-28 N '53. (MLRA 6:12)

1. Iz kafedry operativnoy khirurgii s topograficheskoy anatomiyei (za-vednyushchiy - sasluzhennyy deyatel' nauki professor S.M. Rubashov) Kishinevskogo meditsinskogo instituta. (Aorta--Surgery)

✓
LERNER, I.O., kandidat meditsinskikh nauk

Fasciopannicular areas and surgical zones of the palm. Ortop.
travm.protez. Moskva no.1:90-92 Ja-F '55. (MLRA 8:10)

1. Iz kafedry operativnoy khirurgii i topograficheskoy anatomii
(sav.-prof. S.M. Rubashov) Kishinevskogo meditsinskogo instituta.
(HAND,
palm, division in zones, surg. aspects)

LERNER I.O.

LERNER, I.O.; SHTERENGAS, S.Ye.

Case of atypical supratrochanteric dislocation of the hip. Ortop.
travm. i protez. no.4:56 J1-Ag '55. (MLRA 8:10)

1. Iz khirurgicheskogo otdeleniya (zav.-M.I.Krasil'shchik)
- 2-y gorodskoy bol'nitsy (glavnyy vrach L. Kh.Pinskiy) g. Kishineva
(HIP, dislocations,
supratrochanteric, unusual case)
(DISLOCATIONS,
hip, supratrochanteric, unusual case)

LERNER, I.O., kandidat meditsinskikh nauk.

Possibility of an efficient experimental resection of a single remaining lung. Khirurgiia, no.9:71-72 S '55. (MLRA 9:2)

1. Iz kafedry operativnoy khirurgii s topograficheskoy anatomiyei
(zav. -- zaaluzhennyi deyatel' nauki prof. S.M. Rubashov)
Kishinevskogo meditsinskogo instituta.

(LUNGS, surg.

exper., economical resection of a single remaining lung)

LERNER, I.O.

[Zonal and segmental resection of the lungs; an experimental anatomical study] Zonal'naiia i segmentarnaia rezektsiia legkogo; anatomo-eksperimental'noe issledovanie. Kishinev, Gos.izd-vo Moldavii, 1956. 66 p. (MLRA 10:7)
(LUNGS--SURGERY)

KRASIL'SHCHIK, M.I.; LERNER, I.O.

Removing a Keloid cyst of the mediastinum. Khirurgiya Supplement:
14-15 '57. (MIRA 11:4)

1. Iz khirurgicheskogo otdeleniya 2-y Gorodskoy bol'nitsy Kishineva
(glavnyy vrach I.Kh.Pinskiy)
(CYSTS) (MEDIASTINUM--TUMORS)

LERNER, I.O.

Methods for exposing the upper part of the tibial and the lower
part of the femoral arteries. Ortop., travm. i protez. 18 no.2:
59-60 Mr-Ap '57. (MIRA 10:8)

1. Iz 2-y bol'nitsy g. Kishineva (glavnyy vrach - L.Kh.Pinskiy)
(ARTERIES--LIGATURE)

LERNER, I.O.
LERNER, I.O., kand.med.nauk

Topography and exposure of tendon sheaths of flexors of the first
and fifth fingers. Ortop.travm. i protez. 18 no.4:57-58 J1-Ag '57.
(MIRA 11:1)

1. Iz 2-y gox.bol'nitsy g. Kishineva (glavnyy vrach L.Kh.Pinskiy)
(HAND--SURGERY)

LERNER, I.O., kand.med.nauk (Kishinev, ul. Shchuseva, d.32)

Topography and exposure of the radial nerve in the upper arm.
Nov.khir. arkh. no.1:67 Ja-P '58 (MIRA 11:11)

1. Kishinevskaya 2-ya gorodskaya bol'nitsa.
(RADIAL NERVE--SURGERY)

LENNER, I.O. (Kishinev).

Two cases of interstitial pulmonary and mediastinal emphysema
following radical surgery of the lungs. Eksper.khir. 3 no.4:
61-62 JI-Ag '58 (MIRA 11:9)
(EMPHYSEMA)
(LUNGS---SURGERY)

LERNER, I.O., kand. med. nauk.; SURACH, L.A.

Necrosis of the fingers following intra-arterial blood transfusion.
Akush. i gin. 34 no.6:102 N-D '58. (MIRA 12:1)

1. Is 2-y-gorodskoy bol'nitsy (glavnyy vrach L.Kh. Pinskiy) i 1-go
rodil'nogo doma (glavnyy vrach G.F. Garanina) Kishinev.
(BLOOD--TRANSFUSION) (FINGERS--DISEASES)

LERNER, I.O., kand.med.nauk (Kishinev)

Surgical anatomy of lymph nodes of the hilus pulmonis [with summary in French]. Probl.tub. 36 no.4:44-49 '58 (MIRA 11:7)

1. Iz Vtoroy gorodskoy bol'nitsy (glavnyy vrach L.Eh. Pinskiy).
(LUNGS, anat. & histol.
lymph nodes of hilum (Rus))
(LYMPH NODES, anatomy and histology,
pulm. hilum (Rus))

LERNER, I.O.; GRIGOR'YEVA, N.P.

Case of papillary cystadenoma of the thyroid gland. Khirurgiia 35
no. 11:217 N '59. (MIRA 14:1)

(THYROID GLAND--TUMORS)

GRIGOR'YEVA, N.P.; LERNER, I.O.

Foreign bodies in the stomach. Nov. khir. arkh. no.2:133-134 Mr-Apr
'59. (MIRA 12:7)

1. Respublikanskiy onkologicheskiy dispanser Kishineva i 2-ya
gorodskaya bol'nitsa.
(BEZOAR)

KRASIL'SHCHIK, M.I. [deceased]; LERNER, I.O.

Potentiated anesthesia and anesthesia with lytic mixture.
Zdravookhraneniye 2 no.6:42-44 N-D '59. (MIRA 13:6)

1. Iz 2-y bol'nitsy g. Kishineva (glavnyy vrach L.Kh. Pinskiy)
(ANESTHESIA)

GAMARNIK, M.N.; GRINBERG, I.M.; LERNER, I.O.; SHMULEVICH, P.I.

Retropneumoperitoneum. Zdravookhranenie 4 no. 1:27-30 Ja-P '61.
(MIRA 14:2)

1. Iz 1-oy bol'nitsy g. Bel'tsy (glavnyy vrach - L.Ya. Marmor) i
- 2-oy bol'nitsy g. Kishineva (glavnyy vrach - L.Kh. Pinskiy).
(PNEUMOPERITONEUM, ARTIFICIAL)

LERNER, I.O.; GRIGOR'YEVA, N.P.

Riedel's struma. Zdravookhranenie 4 no. 2:54-55 My-Ap '61.

(MIRA 14:4)

1. Iz 2-y gorodskoy bol'nitsy g. Kishineva (glavnyy vrach L.Kh. Pinskiy) i Respublikanskogo onkodispensera (glavnyy vrach G.B. Khonelidze).

(GOITER)

LERNER, I.P., dotsent

Clinical roentgenologic classification of nonspecific pneumosclerosis
Vrach.delo no.2:145-150 P '56. (MLRA 9:7)

1. Kafedra terapii I (zaveduyushchiy professor A.S.Berlyand
[deceased] Kiyevskogo insituta usovershenstvovaniya vrachey.
(LUNGS--DISEASES)

USSR/Human and Animal Physiology (Normal and Pathological) T
The Effect of Physical Factors. Ionizing Irradiation

Abs Jour : Ref Zhur Biol., No 6, 1959, 27195

Author : Lerner, I.P., Shevel', B.G..

Inst : Kiev Institute for the Advanced Training of Physicians

Title : Case of Polycythemia , Complicated by Radiation Injury
of Vessels.

Orig Pub : Sb. nauchn. rabot po radiol. i rentgenol. Kiyevsk. in-t
usoversh. vrachey. Kiyev, 1957, 207-211

Abstract : No abstract.

Card 1/1

- 172 -

USSR / Human and Animal Physiology. Blood Circulation.

T-4

Abs Jour : Rof Zhur - Biologiya, No 1, 1959, No. 3404

Author : Lerner, I. P.

Inst : Ukrainian Scientific Research Institute of Clinical
Medicine

Title : Differential Diagnosis of Tuberculous and Rheumatic
Pericarditis

Orig Pub : Materialy po obmenu nauchn. inform. Ukr. n.-1. in-t
klinich. meditsiny, 1957, Vyp. 1, 101-103

Abstract : No abstract given

Card 1/1

LERNER, I.P., dotsent, SIRCCH, P.F.

Some clinical aspects of septic endocarditis lenta. Vrach.delo no.6
583-589 Je '58 (MIRA 11:7)

1. Kafedra terapii (zav. - prof. D.F. Chebotarev) Kiyevskogo
instituta usovershenstvovaniya vrachey i Oblastnaya klinicheskaya
bol'nitsa.
(ENDOCARDITIS)

LERNER, I.P., dotsent; ZAGORODSKAYA, M.M. (Kiyev)

Clinical roentgenological characteristics of chronic cor pulmonale. Klin.med. 37 no.4:100-107 Ap '59. (MIRA 12:6)

1. Iz pervoy terapevticheskoy kafedry (zav. - prof.D.F. Chabotarev) i kafedry rentgenologii (zav. - prof.A.Ye. Rubashova) Kiyevskogo instituta usovershenstvovaniya vrachey (dir. - dotsent V.D.Bratus').

(PULMONARY HEART DISEASES, diag.

clin. & x-ray manifest. of chronic cor pulmonale (Rus))

LERNER, I.P., dotsent; BHUSILOVSKIY, Ye.S., kand.med.nauk

Sjögren's syndrome ("dry syndrome"). Vrach.delo no.6:583-
587 Je '60. (MIRA 13:7)

1. Kafedra terapii III (zav. - dotsent I.P. Lerner) Kiyevskogo
instituta usovershenstvovaniya vrachey.
(COLLAGEN DISEASES)

LERNER, I.P., dotsent; BRUSILOVSKIY, Ye.S.

Place of eosinophilic rhinitis in the clinical aspects of allergic diseases. Zhur. ush., nos. 1 gorl. bol. 21 no.2:34-39 Mr-Apr '61.
(MIRA 14:6)

1. Kafedra terapii III Kiyevskogo instituta usovershenstvovaniya vrachey.

(ALLERGY)

(NOSE—DISEASES)

(EOSINOPHILES)

LERNER, I.P., dotsent; ANDRUSHCHENKO, Ye.V., kand.med.nauk

Treatment of chronic cor pulmonale with cardiac glycoside aerosols.
Vrach. delo no.5:22-25 My '61. (MIRA 14:9)

1. Kafedra terapii III (zav. - dotsent I.P.Lerner) Kiyevskogo
instituta usovershenstvovaniya vrachey.
(PULMONARY HEART DISEASES) (AEROSOLS)
(CARDIAC GLYCOSIDES)

LERNER, I.P.; BRUSILOVSKIY, Ye.S.

Felty's syndrome. Nov. khir. arkh. no.5:104-106 S-0 '60.

(MIRA 14:12)

1. Kafedra terapii III (zav. - dotsent I.P.Lerner) Kiyevskogo
instituta usovershenstvovaniya vrachey.
(ARTHRITIS, RHEUMATOID)

LERNER, I.P., dotsent (Kiyev, ul. Ovruchskaya, d.6, kv.1); SIDORENKO, Ye.N.,
assistant

Treatment of multiple thromboembolism. Nov. khir. arkh. no.9:70-
71 S '61. (MIRA 14:10)

1. Kafedra terapii III (zav. - dotsent I.P.Lerner) Kiyevskogo instituta
usovershenstvovaniya vrachey.
(THROMBOSIS) (ANTICOAGULANTS (MEDICINE))

MOROZKIN, Nikolay Ivanovich, prof.; LERNER, I.P., red.; POTOTSKAYA,
L.A., tekhn. red.

[Influenzal pneumonia; its clinical aspects and treatment]
Grippoznaia pnevmonia; klinika i lechenie. Kiev, Gosmediz-
dat USSR, 1962. 77 p. (MIRA 16:1)

1. Chlen-korrespondent Akademii meditsinskikh nauk SSSR (for
Morozkin).

(INFLUENZA) (PNEUMONIA)

LERNER, I.P.; SHEYNIS, M.I.; BRUSILOVSKIY, Ye.S.; SIDORENKO, Ye.N.

Clinical and morphological characteristics of peptic ulcer in chronic cor pulmonale. Vrach. delo no.2:30-34 F '62. (MIRA 15:3)

1. Kafedra terapii III (zav. - dotsent I.P. Lerner) Kiyevskogo instituta usovershenstvovaniya vrachey i patologoanatomicheskoye otdeleniya (zav. - dotsent M.I. Sheynis) gorodskoy klinicheskoy bol'nitsy Shevchenkovskogo rayona g. Kiyeva.

(PEPTIC ULCER)

(PULMONARY HEART DISEASE)

LERNER, I.P., dotsent; TSYGANOV, A.I., kand.med.nauk

Time and diseases. Zhur.ush., nos.1 gorl.bol. 21 no.6:5-9 H-D '61.
(MIRA 15:11)

1. Iz kafedry terapii III (nav. - zasluzhennyi deyatel' nauki
prof. A.I.Kolomiychenko) Kiyevskogo instituta usovershenstvovaniya
vrachey.

(MEDICINE)

LERNER, I.P., dotsent; KREYLICH, A.M.; ANDRUSHCHENKO, Ye.V., kand.med.nauk.

Blood eosinophilia i some diseases of the digestive organs.
Vrach. delo no.9:133-135 8'63. (MIRA 16:10)

1. Kafedra terapii (zav. - dotsent I.P.Lerner) III Kiyevskogo
instituta usovershenstvovaniya vrachey.
(EOSINOPHIILS) (DIGESTIVE ORGANS--DISEASES)

AUDULEV, K.K.; LERNER, I.P.; PRUDNIKOVA, R.V.

Physiological role and insufficiency of the reserve
capacity of the venous canal of the lesser circulation.
Vrach. delo no.10:28-31 0 '63. (MIRA 17:2)

1. Kiyevskiy institut usovershenstvovaniya vrachey.

LERNER, I.P.

Allergic (eosinophilic) lung diseases. Vestn. Akad. med. nauk
SSSR 18 no.4:56-63 '63 (MIRA 17:4)

1. Kafedra terapii III Kiyevskogo instituta usovershenstvovaniya vrachey.

LERNER, I.P.

Paraspecific reactions in allergic processes. Sov.med. 28 no.7:44-49
Jl '65. (MIRA 18:8)

1. Kiyevskiy institut usovershenstvovaniya vrachey.

LENNER, Janos, dr.

Legal aspects of qualifying raw material receptions and the organizational development of arranging quality disputes. Elelm ipar 17 no.9:284-287 S '63.

1. Elelmezesugyi Miniszterium.

FOYGBL', G.A.; LERINER, Kh.S.; ROMANYUK, R.S.

Method of drying plasma in bottles. Probl.gemat. 1 perel.krovi
4 no.3:61 Mr '59. (MIRA 12:6)

1. Iz Odesskoy oblastnoy stantsii perelivaniya krovi (dir.
R.S.Romanyuk).

(PLASMA

method of drying in bottles (Rus))

LERNER, K.L.S.; ROMANYUK, R.S.; LISNEVSKAYA, T.I.; FOYGEL', G.A.

Use of A.N. Filatov's serum in diseases of the nervous system. Trudy
Kiev. nauch.-issl. inst. perel. krovi i neotlozh. khir. 3:21-29 '61.

(MIRA 17:10)

1. Odesskaya oblastnaya stantsiya perelivaniya krovi i kafedra nervnykh
bolezney Odesskogo meditsinskogo instituta.

8(3)

SOV/112-59-3-4758

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 3, p 62 (USSR)

AUTHOR: Lerner, L.

TITLE: Optimum Operating Conditions for Long 400-kv Transmission Lines
(Naivygodneyshiye rezhimy raboty protyazhennykh LEP 400 kv)

PERIODICAL: Sb. nauchno-issled. rabot stud. Elektromekhan. fak. Leningr.
politekhn. in-t, 1958, Nr 3, pp 31-45

ABSTRACT: The conditions are analyzed under which the voltage drop along a 400-kv transmission line would be expedient as compared to the no-drop conditions. If the reactive power is available at the step-up substation and is deficient at the receiving end, the cost of energy loss over a specified period should be compared with the cost of compensating equipment and the losses therein. The advantage of voltage-drop operation can be judged from the formula $b/(\beta \delta \omega - kv) \geq T_0$, where b is the specific investment in synchronous condensers (per unit power), k is the annual charge on the

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8(3)

SOV/112-59-3-4758

Optimum Operating Conditions for Long 400-kv Transmission Lines

investment, $\delta\omega$ is the specific annual energy-loss saving (per unit of synchronous-condenser capacity) in kwh, β is the cost of one kwh, T_0 is the depreciation time period accepted.

I.M.R.

Card 2/2

LERNER, L.; TOLCHINSKIY, I.

New conveyers. Sov. torg 33 no.10:58-60 U '59.

(Conveying machinery)

(MIRA 13:1)

LERNER, L.; TOLCHINSKIY, I.

A butter cutting machine. Sov. torg. 33 no.11:56-58 H '59.
(MIRA 13:2)
(Butter trade--Equipment and supplies)

LERNER, L.; TOLCHINSKIY, I.

A new accumulator cart with a lifting platform. Sov.torg.
33 no.1:43-44 Ja '60. (MIRA 13:4)
(Fork lift trucks)

LANDAU, L.; LERNER, L.

Machine for packaging potatoes. Sov.torg. 33 no.6:76-78 Je '60.
(MIRA 13:7)

(Potatoes--Marketing)

LERNER, L., insh.

Truck for collecting tableware. Obshchestv.pit. no.5:36 My '60.
(MIRA 13:10)
(Restaurants, lunchrooms, etc.--Equipment and supplies)

S/032/62/028/006/012/025
B101/B138

AUTHORS: Ginzburg, V. L., Glukhovetskaya, N. P., and Lerner, L. A.

TITLE: Increasing the sensitivity of the spectral determination of impurities in selenium

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 6, 1962, 682 - 684

TEXT: By adding NaCl (ionization potential $V_i = 5.1$ ev), the $V_{i \text{ eff}}$ of the arc plasma may be controlled in such a way that the sensitivity of the impurity determination is increased considerably. Calibration curves ΔS against $\log C$ were plotted for selenium samples with impurity standards in the presence of carbon powder containing various NaCl additions in the counterelectrode. The dependence of the intensity of the spectral lines on $V_{i \text{ eff}}$ was determined. $V_{i \text{ eff}} = 7 - 8$ ev, achieved by carbon powder with 1% Na (= 2.5% NaCl), was the optimum. The sensitivity increase results from the ratio $\Delta C = C_{\text{without NaCl}} / C_{\text{NaCl}}$. For the elements investigated, the following ΔC values were found: Te 0.46; Hg 0.20; As 0.50; Cd 0.30; Mg 5.0; Ni 2.2; Al 5.5; Au 5.0; Pb 4.0; Bi 2.5; Cu 5.0; Ti 5.0;

Card 1/2

Increasing the sensitivity...

S/032/62/028/006/012/025
B101/B138

Sb 1.0. The brightness of the Cd, Hg, Te, and As lines is not increased when reducing the selenium arc temperature because of the high ionization potential of these elements ($V_i > 8.6$ ev). There are 2 figures and 1 table.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova
Akademii nauk SSSR (Institute of General and Inorganic
Chemistry imeni N. S. Kurnakov of the Academy of Sciences
USSR)



Card 2/2

GINZBURG, V.L.; GLUKHOVETSKAYA, N.P.; LERNER, L.A.

Fluorination of samples in spectral analysis. Zav. lab. 29
no.6:684-685 '63. (MIRA 16:6)

1. Institut obshchey i neorganicheskoy khimii imeni N.S.
Kurnakova AN SSSR.
(Spectrum analysis) (Fluorination)

L 11366-65 EWG(j)/EWP(e)/EWI(m)/EPF(c)/EPF(n)-2/EPR/EWP(t)/EWP(b) Pr-4/PS-4/
Pc-4 AWFL/SSD MJW/JD/WW/JG/AT/WH

ACCESSION NR: AP4044896

S/0032/64/030/009/1082/1084

AUTHOR: Glukhovetskaya, N. P.; Lerner, L. A.

TITLE: Spectrochemical determination of impurities in boron ¹³₂₇

SOURCE: Zavodskaya laboratoriya, v. 30, no. 9, 1964, 1082-1084

TOPIC TAGS: boron, ⁴high purity boron, amorphous boron, crystalline boron, boron spectrochemical analysis, impurity determination

ABSTRACT: A spectrochemical method for analyzing high-purity amorphous or crystalline boron is described. The method comprises two consecutive steps. In the first, chemical, step, impurities are concentrated by simultaneously oxidizing boron and distilling off boron oxide formed in a water vapor stream at 500C for the amorphous or 600—650C for the crystalline form. The apparatus for oxidizing and removing boron is described. Graphite boats were found to be the most suitable for carrying out this operation. Other boat materials tested were quartz, boron nitride, BNC alloy, corundum, and copper. Oxygen alternating with water vapor may also be used for oxidation of amorphous boron. The residual concentrate of impurities is collected in

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L 11366-65

ACCESSION NR: AP4044896

admixed graphite or, better, nickel powder (spectrochemical grade) and submitted for emission spectroscopic analysis by the GOST 6012-51 standard method. Sensitivity of the latter is 10^{-3} — $5 \times 10^{-4}\%$. The overall sensitivity of impurity determination is 10 or more times higher by the method described than by the previously used spectroscopic method without boron removal (sensitivity of the latter method was 4 — $6 \times 10^{-3}\%$ at best). Orig. att. has: 1 figure.

ASSOCIATION: Institut obshchey i neorganicheskoy khimii im. N. S. Kurnakova Akademii nauk SSSR (Institute of General and Inorganic Chemistry, Academy of Sciences, SSSR)

SUBMITTED: 00

ATD PRESS: 3114

ENCL: 00

SUB CODE: IC, GC

NO REF SOV: 002

OTHER: 004

Card 2/2

BRAND, Izrail' Al'bertovich; LERNER, Lev Grigor'yevich, aspirant;
MAKAROVSKIY, Sergey Aleksandrovich; SIVKOV, Arkadiy Ietorovich, inzh.;
BAKHVALOV, Yuriy Alekseyevich, kand. tekhn. nauk, docent

Use of digital computers in the design of electric machinery and
apparatus. Izv. vys. ucheb. zav.; elektromekh. 7 no. 12:1501-1505 '64.
(MIRA 18:2)

1. Nachal'nik vychislitel'nogo tsentra firmy ChKD [Ceskomoravska-
Kolden-Danek], Praga (for Brand). 2. Institut elektromekhaniki
Gosudarstvennogo komiteta po elektrotekhnike pri Gosplane SSSR
(for Lerner). 3. Zamestitel' nachal'nika raschetnogo otdela
TSentral'nogo konstruktorskogo byuro krupnykh elektricheskikh
mashin peremennogo toka Gosudarstvennogo komiteta po elektrotekhnike
pri Gosplane SSSR (for Makarovskiy). 4. Nachal'nik laboratorii
schetnoreshayushchikh ustroystv Leningradskogo filiala Vsesoyuznogo
nauchno-issledovatel'skogo instituta elektromekhaniki (for Sivkov).
5. Kafedra elektricheskikh mashin, apparatov, matematicheskikh i
schetnoreshayushchikh priborov i ustroystv Novocheerkasskogo
politekhnikheskogo instituta (for Bakhvalov).

FRAYFEL'D, E.Ye., mladshiy nauchnyy sotrudnik; LERNER, L.K.

Limestone from the Izyum deposits as aggregate for concretes. Sbor.
trud. IZHNII no.2:51-53 '59. (MIRA 13:9)

1. Yuzhnyy nauchno-issledovatel'skiy institut po stroitel'stvu.
(Limestone)

ZEYTMAN, V.M., inzh.; LERNER, L.K., tekhnik

Silica-brick with marl additives. Sbor. trud. IUZHNII no.2:58-61
'59. (MIRA 13:9)

1. Yuzhnyy nauchno-issledovatel'skiy institut po stroitel'stvu.
(Brick)

VARSHAVSKIY, A.M., kand. tekhn. nauk; EL'TERMAN, L.M.; LERNER, L.K.

Coupling of high-voltage cab-tire cables. Met. 1 gornorud.
prom. no.4:76-77 J1-Ag '65. (MIRA 18:10)

SERKOVA, Zinaida Vasil'yevna; LERNER, Lyudmila Konstantinovna;
LYAKHOVICH, Ionif Abramovich; MUKHIN, Viktor
Zakharovich; POLUBNEVA, V.I., inzh., red.

[Manufacturing panels for series 1-468r apartment houses of dense and cellular lime concrete; practices of the Kuryazh Silica Brick Plant and the No.3 Reinforced Concrete Structural Element Plant] Proizvodstvo paneli domov serii 1-468r iz plotnogo i iacheistogo silikatnogo betona; opyt Kuriyazhskogo zavoda silikatnogo kirpicha i zavoda zhelezobetonnykh konstruktsii no.3 (Khar'kovskaya oblast'). Moskva, Gosstroizdat, 1963. 28 p. (MIRA 17:3)

1. Akademiya stroitel'stva i arkhitektury SSSR. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhnicheskoy pomoshchi stroitel'stvu. 2. Rukovoditel' laboratorii silikatnykh materialov Yuzhnogo nauchno-issledovatel'skogo instituta promyshlennogo stroitel'stva Gosstroya SSSR (for Serkova). 3. Rukovoditel' gruppy laboratorii silikatnykh materialov Yuzhnogo nauchno-issledovatel'skogo instituta promyshlennogo stroitel'stva Gosstroya SSSR (for Lerner). 4. Glavnyy inzhener zavoda zhelezobetonnykh konstruktsii No.3 (for Mukhin). 5. Glavnyy tekhnolog laboratorii silikatnykh materialov Yuzhnogo nauchno-issledovatel'skogo instituta promyshlennogo stroitel'stva Gosstroya SSSR (for Lyakhovich).

LERNER, L.S.; TERESHCHENKOV, A.A.; KOCHERYSHKIN, I.K.; NEVSKIY, Ye.V.,
nauchnyy red.; KONTSEVAYA, E.M., red.; PEREDERIY, S.P., tekhn.
red.

[Organization and methodology of work in electrical engineering
laboratories] Organizatsiya i metodika laboratornykh rabot po
elektrotekhnike. Moskva, Vses. uchebno-pedagog. izd-vo Prof-
tekhizdat, 1961. 109 p. (MIRA 14:8)
(Electric engineering—Laboratory manuals)

BABSKIY, A.A.; ROMANYUK, R.S.; LEINISB, L.S.; KOROTCHNIKAYA, O.L.; MIL'SHTEYN,
M.A.

Seromarin, a colloidal-salt blood substitute. Trudy Kiev. nauch.-issl.
inst. perel. krovi i nestlozh. khir. 3:103-106 '61. (MIRA 17:10)

1. Odesskaya Oblastnayastantsiya perelivaniya krov.

L 06440-67 EWT(m)/EWP(t)/ETI IJP(c) JD
ACC NR: AP6026719 SOURCE CODE: UR/0181/66/008/008/2494/2496

AUTHOR: Tyapunina, N. A.; Shaskol'skaya, M. P.; Lerner, M. D. 43
E

ORG: Moscow State University im. M. V. Lomonosov (Moskovskiy gosudarstvennyy universitet); Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov)

TITLE: Change in the photosensitivity of silver chloride crystals under the influence of high-frequency vibration and dependence of internal friction on prior illumination of the crystal 21 47

SOURCE: Fizika tverdogo tela, v. 8, no. 8, 1966, 2494-2496

TOPIC TAGS: silver chloride, photosensitivity, hf vibration, internal friction

ABSTRACT: AgCl single crystals in glass ampoules were subjected to longitudinal mechanical vibrations in a resonance oscillator at a frequency of ~100 kc. The amplitude of relative deformation was varied from ~0.5 to ~30 g/mm². The maximum stresses during the vibration did not exceed the yield stress of AgCl. It was noted that if the ampoule was not protected from daylight, the colors of the crystals darkened. This increased photosensitivity persisted after the vibration was discontinued. Following the action of light, the internal friction not only decreased in magnitude, but its dependence on the deformation amplitude changed. It is concluded that the photosensitivity of AgCl crystals increases if they are subjected to high-frequency vibration, and that prior illumination of the crystals affects the internal friction.

Card 1/2

ACC NR: AP6026719

Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 18Feb66/ ORIG REF: 002/ OTH REF: 001

Card 2/2 *pla*

LERNER, M.

Metallic constructions joined by soldering. p. 506.

REVISTA CAILOR FERATE. (Cailor Ferate Romine) Bucuresti, Rumania.
Vol. 7, no. 9, Sept. 1959.

Monthly list of East European Accessions (EEAI) LC Vol. 9, no. 2, Feb. 1960

Uncl.

BUTOMA, B.Ye.; SOKOLOV, P.A.; BALAYEV, D.N.; SERGEYEV, M.M.; SHUMSKIY, E.A.;
 TYAPKIN, M.Ya.; SMIRNOV, V.A.; PIROGOV, N.I.; FEDOROV, N.A.;
 GOLYASHKIN, G.S.; KUZ'MIN, A.P.; AKULINICHEV, V.P. brigadir; CORBENKO,
 Ye.M.; BYSTREVSKIY, L.M., inzh.; STEPANOV, P.S., brigadir; Us, I.S.,
 brigadir-sudosborashchik, deputat Verkhovnogo Soveta SSSR; USTINOV,
 P.D., slesar'-sborshchik; FINOGENOVA, N.Ya., tokar'; LERNER, M.;
 ALEKSEYEV, R.Ye.; SIVUKHIN, K., starshiy master; OSTAP'YEV, A.I.;
 TROFIMOV, B.A., inzh.; KOVRYZHKIN, V.F., inzh.; MOISEYEV, A.A., prof.;
 GOLUBEV, N.V.; MOGILEVICH, V.I.; ANDRYUTIN, V.I.; ANDRIYEVSKIY, M.I.;
 MATSKEVICH, V.D., dots.

Shipbuilders prepare for the 21st Extraordinary Congress of the CPSU.
 Sudostroenie 25 no.1:1-25 Ja '59. (MIRA 12:3)

1. Predsedatel' Gosudarstvennogo komiteta Soveta Ministrov SSSR po sudostroyeniyu, ministr SSSR (for Butoma). 2. Nachal'nik upravleniya sudostroitel'noy promyshlennosti Leningradskoy oblasti (for Sokolov).
3. Direktor Baltiyskogo sudostroitel'nogo zavoda im. S.Ordzhonikidze (for Balayev). 4. Nachal'nik tsakhov Baltiyskogo sudostroitel'nogo zavoda im. S. Ordzhonikidze (for Sergeyev, Shumskiy). 5. Nachal'nik mekhanicheskogo tsakha Baltiyskogo sudostroitel'nogo zavoda im. S. Ordzhonikidze (for Tyapkin). (Continued on next card)

BUTOMA, B.Ye.---(continued) Card 2.

6. Brigada kommunisticheskogo truda Baltiyskogo sudostroitel'nogo zavoda im. S. Ordzhonikidze (for Smirnov). 7. Glavnyy inzhener Admiralty-skogo sudostroitel'nogo zavoda, Leningrad (for Pirogov). 8. Glavnyy inzhener sudostroitel'nogo zavoda im. A.A. Zhdanova (for Fedorov). 9. Nachal'nik elektrodnoy tsekha Sudostroitel'nogo zavoda im. A.A. Zhdanova (for Golyashkin). 10. Nachal'nik tsekha kommunisticheskogo truda sudostroitel'nogo zavoda im. A.A. Zhdanova (for Kuz'min). 11. Malyarnyy tsekh sudostroitel'nogo zavoda im. A.A. Zhdanova (for Akulinichev). 12. Glavnyy inzhener Nikolayevskogo sudostroitel'nogo zavoda im. I.I. Nosenko (for Gorbanko) 13. Nikolayavskiy sudostroitel'nyy zavod im. I.I. Nosenko (for Bystrevskiy, Us, Ustinov, Finogenova). 14. Sledarno-sbornaya brigada Nikolayevskogo sudostroitel'nogo zavoda im. I.I. Nosenko (for Stepanov). 15. Zamestitel'nachal'nika konstruktorskogo byuro sudostroitel'nogo zavoda "Krasnoye Sormovo" (for Lerner). 16. Glavnyy konstruktor konstruktorskogo byuro sudostroitel'nogo zavoda "Krasnoye Sormovo" (for Alekseyev). 17. Sudostroitel'nyy zavod "Krasnoye Sormovo" (for Sivukhin). 18. Direktor sudostroitel'nogo zavoda "Leninskaya kuznitsa" (for Ostaf'yev). 19. Sekretar' partkoma Tsentral'nogo nauchno-issledovatel'skogo instituta (for Trofimov). (Continued on next card)

BUTOMA, B.Ye.--(continued) Card 3.

20. Predsedatel' Leningradskogo oblastnogo pravleniya Nauchno-tekhnicheskogo otdela sudostroitel'noy promyshlennosti (for Moiseyev).
21. Glavnyye inzhenery Konstruktorskogo byuro (for Golubev, Andryutin).
22. Glavnyy konstruktor Konstruktorskogo byuro (for Mogilevich).
23. Nachal'nik Tsentral'nogo tekhniko-konstruktorskogo byuro (for Andriyevskiy).
24. Zamestitel' direktora Leningradskogo korablestroitel'nogo instituta po uchebnoy chasti (for Matskevich).

(Shipbuilding)

LERNER, M.

~~SECRET~~
Let's regulate the records of boxes and containers. Sov. torg. 34
no.10:38-39 O '60. (MIRA 13:10)

1. Nachal'nik planovogo otdela gortorga, g.Berezniki.
(Containers)

ZAYTSEV, V.; LERNER, M.; GUREYEV, A.; ZABRYANSKIY, Ye.; KITSKIY, E.

New antiknock compound for gasolines. Avt.transp. 40 no.1:17-19
Ja '62. (MIRA 15:1)

(Gasoline--Antiknock and antiknock mixtures)

LERNER, M., kand. khim. nauk

Sky troubles of the miraculous chemistry. Znan. ta pratsia
no.2:7-8 F '63. (MIRA 16:4)

(Metals at high temperatures)

LERNER, M.I.; SOLOVICH, B.A.

Dies (Metalworking)

Lowering the cost of separate operations. *Trof. prom.* 29, no. 9, 1957.

Monthly List of Russian Accessions, Library of Congress, December 1952. Unclassified.

LERNER, M.I.

The ZGS-100 grain loader. Biul.tekh.-ekon.inform.Gos.nauch.-issl.
inst.nauch.i tekh.inform. no.9:58-59 '62. (MIRA 15:9)
(Grain-handling machinery)

79-12-35/43

AUTHORS: Gorbacheva, I. N., Lerner, M. I.,
Zapesochnaya, G. G., Varnakova, L. P.,
Preobrazhenskiy, N. A.

TITLE: Investigations in the Field of the Synthesis of the
Alkaloid Magnolamine (Issledovaniye v oblasti sinteza alkaloida
Magnolamina).

PERIODICAL: Zhurnal Obshchey Khimii, 1957, Vol. 27, Nr 12,
pp. 3353-3357 (USSR)

ABSTRACT: On the basis of the investigations conducted by the
authors, the formula I was proposed for magnolamine in this
paper. By a complete synthesis it was possible to establish
the structure of this alkaloid definitively. In the present
investigation it was succeeded to produce the basic inter-
mediate product of the synthesis of the dimethylether of
magnolamine. By means of a condensation of the dichlorine
anhydride of the 3,4 - dimethyloxy - 4,6 - dicarboxymethyl
diphenylether (formula II) with - (3 - methoxy - 4 -
benzyloxy) - phenylethylamine (formula III) the diamide
was obtained (formula IV) the simultaneous closing of the
two isoquinoline rings lead to the dichloric hydrate of the
3,4 - dimethoxy - 4",6' - [bi - (6 - methoxy - 7 - benzyl-

Card 1/2

Investigations in the Field of the Synthesis of the Alkaloid Magnolamine 79-12-35/42

oxi) - 3,4 dihydro - isoquinolyle] - dimethylphenylether (formula V). A further hydration, a methylation and a removal of the benzyl residua must lead to the dioxymethyl-ether of the magnolamine. The 3,4 - dimethoxy - 4',6 - dicarboxymethyldiphenylether (formula II) was produced by two methods. The further reaction process is represented by the formulae VI, VII, VIII, and IX. From this it appears, that a basic intermediate product of the synthesis of the dimethylether of the alkaloid magnolamine has been synthesized. There are 6 references, 2 of which are Slavic.

ASSOCIATION: Moscow Institute of Fine Chemical Technology
(Moskovskiy institut tonkey khimicheskoy tekhnologii).

SUBMITTED: August 21, 1956

AVAILABLE: Library of Congress

1. Magnolamine - Synthesis 2. Alkaloids - Synthesis

Card 2/2

LERNER, M.M.

Three-phase dynamic forming of anode foil for electrolytic
condensers. Izv. vys. ucheb. zav.; energ. 2 no.7:60-68 J1
'59. (MIRA 13:1)

1. Vsesoyuznyy nauchnyy energeticheskiy institut.
(Aluminum—Electrometallurgy)

LERNER, M.M., inzh.

Some problems of three-phase dynamic forming by alternating
current. Izv.vys.ucheb.zav.; energ. 2 no.11:67-73 N '59.
(MIRA 13:4)

1. Vsesoyuznyy zaachnyy energeticheskiy institut. Predstavlena
kafedroy elektroizolyatsionnoy i kabel'noy tekhniki.
(Electroforming)

SOV/143-59-5-5/19

9(3)
AUTHORS: Tareyev, B.M., Doctor of Technical Sciences, Professor, and Lerner, M.M., Engineer

TITLE: An Investigation of the Forming Process of Aluminum Foils for Electrolytic Capacitors by Three-Phase Power Frequency Current

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy - Energetika, 1959, Nr 5, pp 36-45 (USSR)

ABSTRACT: Studying the process of static forming of anode aluminum foils by three-phase alternating current will result in a more complete evaluation of the advantages of this method, which eventually will find industrial application. In this paper, the authors consider the connection between capacitance of the foil sample to be formed and the linear forming voltage and also the direct voltage component in the tanks. Figure 1 shows the connection of 3 tanks for three-phase static forming of foils. The authors discuss the time required for forming the foils, the final forming currents and the speed of oxide layer formation. They ✓

Card 1/3

SOV/143-59-5-5/19

An Investigation of the Forming Process of Aluminum Foils for
Electrolytic Capacitors by Three-Phase Power Frequency Current

compare the quantity of power required for different forming methods. The forming of aluminum foils was performed in tanks with stainless steel electrodes (steel 1Kh18N9T). The electrolyte consisted of boric acid (100 gr/liter) and borax (0.5 gr/liter), and had a temperature of 80°C. As a rule, 60 min were required for the forming process. Samples of 0.08 mm thick aluminum foils, 3x5 cm, having a purity of 99.95%, were subjected to forming. The data in Table 1 show that the final currents hardly depend on the forming voltage with three-phase forming; on the average they amount to 1.22 milliamp/cm². Experimental data confirmed that the final current density does not depend on the voltage. With three-phase forming the oxide layer is formed faster than with two-phase forming. If the foil formation is performed on direct current with the voltage U and by three-phase alternating current with the voltage U_n , with the aforementioned electrolyte composition, then an

Card 2/3

SOV/143-59-5-5/19

An Investigation of the Forming Process of Aluminum Foils for
Electrolytic Capacitors by Three-Phase Power Frequency Current

identical capacitance of the foil may be obtained under the condition $U_0 = U_-$. The direct voltage component U_0 , during forming under these conditions, is equal to half the effective value of the linear voltage. In the ultimate case, when the resistance of the electrolyte is equal to zero, and if the valve effect of the oxide layer is ideal, U_0 is equal to the amplitude of the phase voltage. There are 2 diagrams, 9 graphs, 1 table and 3 Soviet references. This article was presented by the Katedra elektrolizatsionnoy i kabel'noy tekhniki (The Chair of Electrical Insulation and Cable Engineering).

ASSOCIATION: Vsesoyuznyy zaochnyy energeticheskiy institut (All-Union Correspondence Institute of Power Engineering)

SUBMITTED: December 28, 1958

Card 3/3

8 (3)

AUTHORS:

Tareyev, B. M., Doctor of Technical Sciences, Professor, Lerner, M. M., Engineer
SCV/105-59-6-16/28

TITLE:

Continuous Alternating Current Oxidation of the Anode Foil of Electrolytic Condensers (Neprieryvnoye oksidirovaniye peremennym tokom anodnoy fol'gi dlya elektroliticheskikh kondensatorov)

PERIODICAL:

Elektrichestvo, 1959, Nr 6, pp 71 - 76 (USSR)

ABSTRACT:

This is an investigation of the continuous-band-motion oxidation of anode foil bands with single-, two-, and three-phase a.c. A counterconnection of the baths appears to be most convenient. The utilization of troughs of conventional construction for a.c. oxidation is possible only if the troughs are made of oxidation-resistant material, (as, for example, stainless steel 1Kh18N9T). The highest operational stability during oxidation is achieved if one foil is pulled through counterconnected baths (as shown in figure 3b). With respect to an equal load distribution on the transformers a three-phase oxidation is very interesting. It gives, similar as a two-phase oxidation, an oxide layer of high quality. The oxidation of anode foils by continuous band motion by means of a.c. and counterconnected baths avoids the rectification of the a.c.

Card 1/2

Continuous Alternating Current Oxidation of the
Anode Foil of Electrolytic Condensers

SOV/105-53-6-16/28

and hence the energy losses connected with such a transformation. No short-circuits will occur, if the foil breaks, the $\cos \varphi$ of the installation increases and the output also increases owing to the elimination of polarization at the electrodes. There are 7 figures, 1 table, and 7 Soviet references.

ASSOCIATION: Vsesoyuznyy zaachnyy energeticheskiy institut (All-Union
Correspondence Institute of Power Engineering)

SUBMITTED: December 25, 1958

Card 2/2

LEARNER, M. M., Cand Tech Sci -- (diss) "Dynamic shaping of anode foil for electrolytic condensers using alternating current." Moscow, 1960. 10 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Order of Lenin Power Inst); 250 copies; price not given; (KL, 21-60, 124)

S/194/62/000/004/102/105
D201/D308

AUTHOR: Lerner, M. M.

TITLE: The effectiveness of changing over to AC forming of the anode foil of electrolytic capacitors

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 4, 1962, abstract 4-7-273r (Sb. tr. nauchno-tekhn. o-vo radio tekhn. i elektrosvyazi im. A. S. Popova, 1960, no. 1, 147-156)

TEXT: The basic drawback of DC forming are: 1) A low efficiency of the AC to DC conversion installation; 2) frequent critical damping in tanks; 3) electrode polarization slowing down the forming process. The advantages of AC forming are as follows: 1) No current conversion; 2) speeding up of the process owing to the absence of electrode polarization; 3) increase in the $\cos \varphi$ of the installation, because the tanks, presenting a capacitive load, are fed by the transformers directly; 4) simplification of the power plant handling, because the motor generators are replaced by trans-

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D201/D308

The effectiveness of ...

formers; 5) practical elimination of the critical damping in tanks connected in opposition. The detailed economical analysis, given as applied to a factory producing 20 million electrolytic capacitors a year, shows that the total saving, resulting from changing over from DC to AC is about 3.5 million roubles, not taking into consideration the other advantages of the AC forming: 1) the possibility of continuous control of the forming process; 2) possible increase in the tank output by applying forced cooling; 3) elimination of pre-forming operation. 5 references. / Abstracter's note: The term 'critical damping', used in the text, is the result of translating the abbreviation K3 (KZ) within the text, which has no clear meaning to the abstracter. It may also be 'critical load'. / Abstracter's note: Complete translation. /

Card 2/2

LERNER, M.M., inzh.

Productivity of continuous oxidizing of anode foil for
electric capacitors. Izv.vys.ucheb.zav.; energ. 3 no.3:
39-46 Mr '60. (MIRA 13:3)

1. Vsesoyuznyy zaochnyy energeticheskiy institut. Predstavlena
kafedroy elektroizolyatsionnoy i kabel'noy tekhniki.
(Electric capacitors)

TAREYEV, B.M., doktor tekhn.nauk, prof.; LERNER, M.M., kand.tekhn.nauk

Concerning the replacement of copper with aluminum in the
electric industry. Elektrichestvo no.10:78-82 0 '60. (MIRA 14:9)
(Electric engineering—Materials)

TAREYEV, B.M.; LERNER, M.M.

Theory of the unilateral conductivity of an oxide film on aluminum.

Fiz. tver. tela 2 no.10:2487-2492 '60.

(MIRA 13:12)

(Films (Chemistry)—Electric properties)

(Aluminum—Electric properties)

9.2110 (1043, 1081, 1145)

84600

S/181/60/002/010/023/051

B019/B056

AUTHORS: Tareyev, B. M. and Lerner, M. M. 21 18

TITLE: The Theory of Unilateral Conductivity of an Oxide Film
on Aluminum 21

PERIODICAL: Fizika tverdogo tela, 1960, Vol. 2, No. 10, pp. 2487-2492

TEXT: The present theory of unilateral conductivity of oxide films on aluminum describes satisfactorily the behavior of an oxidized sample immersed in an electrolyte. If, however, the sample is taken out of the electrolyte, this theory fails in the description of a number of its properties. This theory is especially not developed for electrolytic capacitors with solid electrolytes. The authors suggest a hypothesis that holds good for oxide films which are formed in weak electrolytes, if the former has a positive potential. In this hypothesis it is assumed that a p-n- junction exists, which is destroyed with the formation of an n-type semiconductor: 1) by removing the voltage from the sample, 2) by taking the sample out of the electrolyte, 3) by applying a negative

Card 1/2

84600

The Theory of Unilateral Conductivity of an
Oxide Film on Aluminum

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B019/B056

potential to the sample relative to the electrolyte (in this case the defects are in the oxide film). On the basis of this hypothesis suggested by the authors, it is possible to explain the behavior of oxidized Al-samples in the following cases: 1) The voltage is removed from a sample dipped into an electrolyte. 2) A negative potential is applied to the sample relative to the electrolyte. 3) The sample taken out of the electrolyte is subjected to the action of various media and temperatures. 4) Onto the sample taken out of the electrolyte, a layer of p-type semiconductor or of metal is applied. There are 24 references: 3 Soviet, 11 US, 3 Dutch, 5 German, 1 Swiss, and 1 French.

SUBMITTED: August 29, 1959

Card 2/2

GRUBNIK, N.N.; LERNER, M.M.; YAMANOVA, L.V.

Review of V.T.Renne's book "Electric condensers." Elektrichestvo
no.1:95 Ja '61. (MIRA 14:4)
(Electric capacitors) (Renne, V.T.)

TAREYEV, B.M., doktor tekhn.nauk, prof.; LERNER, M.M., kand.tekhn.nauk

Trends in the development of aluminum electrolytic capacitors
abroad. Elektrichestvo no.5:81-84 My '61. (MIRA 14:9)
(Electric capacitors)

37748

S/196/62/000/009/009/018

E114/E184

9.2110

AUTHORS:

Lerner, M.M., and Tareyev, B.M.

TITLE:

Single phase formation of anodic foil for capacitors using alternating current

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, no.9, 1962, 6, abstract 9 B28. (Tr. vses. zauch. energ. in-ta, no.18, 1961, 77-91)

TEXT:

Static formation of foil in a single bath directly connected to an a.c. power supply was considered. Two cases were analyzed: 1) when the impedance of the foil $|Z_f|$ exceeds that of the bath $|Z_B|$; and 2) when $|Z_f|$ is of the same order of magnitude as, or much less than, $|Z_B|$. Case 1 is possible if the bath is made of a material which is not affected by a.c. (for instance stainless steel). In this case, a large (reverse) current flows in the conducting direction of the oxide skin which is being formed, and more energy is required than when forming with d.c., or by other a.c. methods, and this, to some extent, impairs the quality of the oxide film because it is intensively

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Single phase formation of anodic ... S/196/62/000/009/009/018
E114/E184

heated during the conducting half cycles. At the same time, the voltage utilization factor K , which is the ratio of the voltage across the oxide film to the total voltage applied to the bath, is high - the whole voltage of the source of power is applied across the oxide film with the exception of voltage drop in the electrolyte. Case 2 is possible if the bath is made of a material susceptible to a.c. (for instance aluminium), and the surface area of the bath is about equal to the area of the foil (or is a little less). In case 2, the reverse currents flowing through the foil are much less than in case 1 because $|Z_B| \gg |Z_Q|$. This reduces the a.c. power consumption and the oxide film is of better quality because heating is less. In case 2, K is much lower, particularly when $|Z_B| > |Z_Q|$. Curves are given of capacitance and current as function of the time of a.c. or d.c. forming for case 1. The oxide film formation time counted from the moment when the current and the capacity cease to fall is about 15-20 mins for both a.c. and d.c. With a.c. the time of passage of ionic currents forming the oxide film is much less than the time of application of voltage.

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Single phase formation of anodic ... S/196/62/000/009/009/018
E114/E184

while with d.c. both intervals are the same. With a.c. and a single bath, the oxide layer forms only during that part of the half cycle during which the current passes through the foil in the non-conducting direction for the oxide layer. The ionic current begins to pass through the oxide layer at an instant when the applied e.m.f. is greater than the back e.m.f. in the oxide film, which is proportional to its thickness. The authors call the time of passage of the ionic current Δt , 'the absolute time of formation'. Inasmuch as Δt is a function of time of the a.c. forming period, full absolute time τ during all the periods can be calculated from the formula:

$$\tau = \bar{\Delta t} \cdot \frac{t_{\text{form}}}{T}, \text{ where}$$

$$\bar{\Delta t} = \frac{1}{t_{\text{form}}} \int_0^{t_{\text{form}}} \Delta t \, dt \quad \text{is the time of formation of the oxide}$$

layer, T - full period of the forming voltage.

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Single phase formation of anodic ... S/196/62/000/009/009/018
E114/E184

If, to a first approximation, it is considered that the time function is linear

$$\Delta t = \frac{T}{2} \left(1 - \frac{t}{t_{\text{form}}} \right)$$

then $\tau = 5$ minutes for a.c. conditions compared with 20 minutes for d.c. Therefore, whilst a.c. is flowing the instantaneous density of ionic current should be somewhat greater than with d.c. Comparative curves are given plotting reverse capacitance against voltage for d.c. and a.c. In the range up to 160 volts the specimens are of the same capacitance if the effective voltage with a.c. is three quarters of the d.c. voltage (the forming takes place in aqueous solution 100 g/litre boric acid and 0.5 g/litre borax at a temperature of 80 °C.). In the second case, film formation was studied with various ratios of foil to bath surface area. It is shown that, as the bath area is reduced, the consumption of electric current decreases. The problem of comparing a.c. and d.c. processes is discussed. A.c. and d.c. can both be conducted in three ways: firstly, at

Card 4/6

Single phase formation of anodic ...

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a constant current density; secondly, at constant voltage; and thirdly, mixed. However, not all these ways are suitable for comparing a.c. and d.c. processes. In the first way comparison is difficult because with a.c. not all of the current is used for the formation of the oxide layer. It has a considerable capacitative component, and the reverse current does not form the oxide at all. It is impracticable to utilize the third (mixed) way for comparison because it partially includes the first way. The most convenient is the second way - comparison at constant forming voltage. The choice of the equivalent voltages for a.c. and d.c. can be made from the requirements of creating the same capacitance of oxide layer - its most stable and simply measured characteristic. In this case, other conditions being equal, the a.c. voltage U is considered equivalent to a d.c. voltage U , if the capacitance of the samples being compared after formation is the same.

2 references.

Abstractor's remarks. The detailed analysis of the a.c. method shows that an aluminium bath whose surface is much greater than Card 5/6

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that of the foil cannot be included in case 1 to the same extent as the a.c. method with a stainless steel bath. Although with an aluminium bath of extensive surface $|\bar{Z}_B| \ll |\bar{Z}_\phi|$ there is no sharp increase in the reverse current with a.c. under these conditions because both the bath and the foil have rectifying properties. Thus, the bath and the foil being formed in it comprise a system of two opposing electrolytic valves. The a.c. case with one aluminium bath of extensive surface was further investigated by the authors and practical confirmation was obtained of the possibility of the dynamic forming of an oxide layer using a.c. in industrial conditions in one bath, and in such conditions the oxide layer is of relatively high quality.

[Abstractor's note: Complete translation.]

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